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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Eric Cohen-Solal et al.
SERIAL NO. : 09/703,419 EXAMINER : Kelly L. Jerabek
FILED : November 1, 2000 ART UNIT : 2612
FOR : METHOD AND APPARATUS FOR TRACKING AN OBJECT OF
INTEREST USING A CAMERA ASSOCIATED WITH A HAND-HELD
PROCESSING DEVICE

APPEAL BRIEF TRANSMITTAL LETTER

Mail Stop Appeal Brief-Patents
Commissioner for Patents
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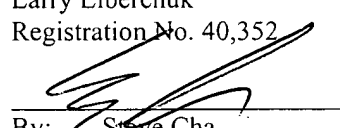
Dear Sir:

Appellants respectfully submit three copies of an Appeal Brief For Appellants that includes an Appendix with the pending claims. The Appeal Brief is now due on December 14, 2005.

Appellants enclose a check in the amount of \$500.00 covering the requisite Government Fee.

Should the Examiner deem that there are any issues which may be best resolved by telephone communication, kindly telephone Applicants undersigned representative at the number listed below.

Respectfully submitted,
Larry Liberchuk
Registration No. 40,352

By: 
Steve Cha
Attorney for Applicant
Registration No. 44,069

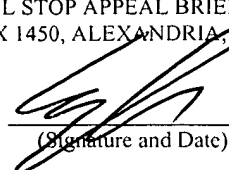
Date: December 12, 2005

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(Name of Registered Rep.)


(Signature and Date)



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

In re the Application

Inventor : **Eric Cohen-Solal et al.**
Application No. : **09/703,419**
Filed : **November 1, 2000**
For : **METHOD AND APPARATUS FOR TRACKING AN
OBJECT OF INTEREST USING A CAMERA
ASSOCIATED WITH A HAND-HELD PROCESSING
DEVICE**

APPEAL BRIEF

On Appeal from Group Art Unit 2612

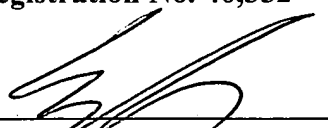
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Date: December 12, 2005

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Attorney for Applicant
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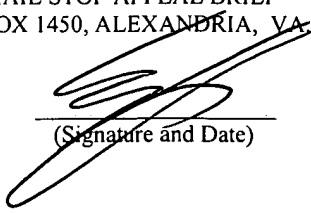

(Signature and Date)

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I. REAL PARTY IN INTEREST

The real party in interest is the assignee of the present application, U.S. Philips Corporation, and not the party named in the above caption.

II. RELATED APPEALS AND INTERFERENCES

With regard to identifying by number and filing date all other appeals or interferences known to Appellant which will directly effect or be directly affected by or have a bearing on the Board's decision in this appeal, Appellant is not aware of any such appeals or interferences.

III. STATUS OF CLAIMS

Claims 1, 4, 6 and 10-15 are presented for examination. All of these claims are pending, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

In response to the patent application filed on November 1, 2000 and afforded US Patent Application Serial No. 09/703,419, a first Office Action, dated March 12, 2004, was entered into the record. The Office Action rejected claims 1, 2, 4-7, 10 and 12-15 under 35 USC 102(b) as being anticipated by Leppisaari (USPPA no. 2002/0101517). Claim 9 was rejected under 35 USC 103(a) as being unpatentable over Leppisaari, claim 3 was rejected under 35 USC 103(a) as being unpatentable over Leppisaari and further in view of Yuyama (USP no. 5, 612,732), claim 8 was rejected under 35 USC 103(a) as being unpatentable over Leppisaari in view of Yerazunis (USP no. 6,600,657), and claim 11 was rejected under 35 USC 103(a) as being unpatentable over Leppisaari in view of

Van Den Herik (USP no. 6,253,032) On May 5, 2004, a response to the rejection of the claims was provided. Claims 1, 14 and 15 were amended. On August 3, 2004, a second and Final Office Action was entered into the record. Claims 1, 2, 4-7, 9-10 and 12-15 were rejected under 35 USC 103(a) as being unpatentable over Tomitaka (USP no. 5,812,193) in view of Leppisaari. Claim 3 was rejected under 35 USC 103(a) over Tomitaka in view of Leppisaari and further in view of Yuyama, claim 8 was rejected under 35 USC 103(a) as being unpatentable over Tomitaka in view of Leppisaari and further in view of Yerazunis, and claim 11 was rejected under 35 USC 103(a) as being unpatentable over Tomitaka in view of Leppisaari and further in view of Vincent (USP no. 6,195,122). On September 27, 2004, a proposed response to the second and Final Office Action was provided. Claims 1, 14 and 15 were amended. On October 4, 2004, a response to the second and Final Office Action was filed. Claims 1, 14 and 15 were amended. On October 6, 2004 a telephonic interview was held to discuss the proposed amendments.

On November 12, 2004, an Advisory Action was entered into the record. The Advisory Action stated that the amendments made to the claims raised new issues that required further consideration. For purpose of Appeal the amendments to the claims were not entered. On December 2, 2004, a Request for Continued Examination was entered into the record, which requested that the amended claims provided in the Response filed October 4, 2005 be considered. On February 24, 2005, an Office Action was entered into the record, which rejected claims 1-15. Claim 1 was rejected under 35 USC 112, second paragraph as being indefinite. Claims 1, 2, 4-7, 9 and 12-15 were rejected under 35 USC 103(a) as being unpatentable over Cheong (USP no. 6,005,609) in

view of Saburi (USP no. 6,556,235). Claim 3 was rejected under 35 USC 103(a) as being unpatentable over Cheong in view of Saburi and further in view of Yuyama, claim 8 was rejected under 35 USC 103(a) as being unpatentable over Cheong in view of Saburi and further in view of Yerazunis, and claims 10-11 were rejected under 35 USC 103(a) as being unpatentable over Cheong in view of Saburi and further in view of Vincent.

On April 22, 2005 a response was filed which presented argument as to why the claims were not rendered unpatentable over the cited references. Claims 1, 4, 6, 10, 12, 13, 14, and 15 were amended. Claims 2, 3, 5, 7, 8, and 9 were cancelled. On July 14, 2005 a second and Final Office Action was entered into the record. Claims 1, 4, 6, 10 and 12-15 were rejected under 35 USC 103(a) as being unpatentable over Platte (USP no. 4,864,409) in view of Saburi. Claim 11 was rejected under 35 USC 103(a) as being unpatentable over Platte in view of Saburi and further in view of Vincent. On August 11, 2005 a response to the Final Office Action was filed which presented arguments showing why the claims were not rendered obvious by the cited references. Amendments were made to claims 14 and 15 to correct minor errors.

An Advisory Action, dated October 4, 2005, was entered into the record that maintained the reason for the rejection of the claims. The Advisory Action stated that for the purposes of appeal the amendments to the claims would be entered.

A Notice of Appeal, with appropriate fee, was filed on October 14, 2005. This Appeal Brief is being filed within two (2) months after the filing of the Notice of Appeal.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention describes a method and apparatus for tracking an object of interest using a camera integrated into or otherwise associated with a mobile device, such as a telephone, PDA, portable computer (see page 2, lines 6-9). Relative movement between the hand-held (mobile) device and an object of interest is determined and at least one setting of the camera is adjusted so as to maintain a desired framing of the object of interest within an image generated by the camera (see page 2, lines 12-16). In one aspect of the invention, the relative movement between the mobile device and the object of interest is determined using an orientation determination device such as a gyroscope (see page 2, lines 16-20). In a second aspect, the relative movement between the camera and the object of interest is determined by generating a model of the object of interest within a given image generated by the camera upon initialization of the image-based tracking and subsequent images are analyzed. Appropriate adjustments are then made to the camera settings to maintain the desired framing of the object of interest with the subsequent images (see page 2, lines 25-31). Generally the output of an orientation determination device is provided to a processor which implements a tracking process (see page 5, lines 28-33). Fig. 3 illustrates a flow diagram wherein a user frames the object to interest in the frame and after the object of interest is properly framed the orientation determination device monitors the orientation of the hand-held device and reports any rotation to the processor which adjusts the camera settings so as to maintain the desired framing of the object of interest (see p. 6, line 11-p.7, line 2).

VI. GROUND FOR REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. Claims 1, 4, 6, 10 and 12-15 stand rejected under 35 USC §103(a) as being unpatentable over the combination of Platte in view of Saburi; and
2. Claim 11 stands rejected under 35 USC §103(a) as being unpatentable over Platte in view of Saburi and further in view of Vincent.

VII. ARGUMENT

1. 35 USC §103 Rejection of claims 1, 4, 6, 10 and 12-15

The rejection of claims 1, 4, 6 and 10-15 is in error because the references fail to show a limitation cited in the independent claims and the claims depending therefrom.

The instant invention, as recited in claim 1, for example, claims a camera housed in a portable device that determines relative movement between an object of interest in a field of view and the portable device and adjusts at least one camera setting to maintain a desired framing and tracking of the object of interest.

Platte discloses a television camera that includes acceleration correction device for correcting sudden movements of the camera to prevent blurring of the resulting television picture. The correction device changes the starting point of an image target depending upon the amount and direction of the acceleration. This correction does not occur until the acceleration exceeds a threshold value (see Abstract). Platte discloses that the camera detects and measures a strong, inadvertent acceleration of the camera housing and converts it to an electrical correcting variable (see col. 1, lines 40-44). The correcting variable acts on the new starting position of a scanning raster of the target in

such a manner that the movement of the viewing field caused by the inadvertent acceleration is compensated in the two orthogonal directions in the plane of the target (see col. 1, lines 44-47). Platte, accordingly, discloses a system that determines the movement of a camera only, independent of the target object being viewed, and compensates for the sudden movement of the camera by adjusting the starting position of the scan of the target as the target is known to be positioned in a different area or framing within the field of view.

Saburi discloses a method operable in a portable videophone for an automatic response to an incoming call and two-way communication using at least images (see Abstract). "An object of the [Saburi device] is to provide a portable videophone unit which makes smooth two-way communication possible even with an opposite party who is not accustomed to the operation of portable videophone unit, which automatically responds to an incoming call from a particular calling party to permit two-way communications." (see col. 2, lines 1-7). Saburi discloses in col. 6, lines 4-9, that "the automatic response mode means a response mode in which when an incoming call from a particular opposite party who is permitted to have communication in an automatic response mode, the portable videophone unit proceeds to an off-hook status without the key being pressed down and two-way communication in the VP mode is made." Hence, Saburi discloses an operational mode of a videophone that allows for signals within the calling signal to activate the videophone.

However, contrary to the reason for rejecting the claims, as recited in the Final Office Action and for maintaining the rejection of the claims, as recited in the Advisory Action, the combination of Platte and Saburi fail to render obvious the aforementioned

claims as neither Platte nor Saburi teach or suggest "detecting relative movement between the hand-held device and the object of interest within a displayed image generated by said camera; and continuously electronically adjusting the camera, without use of a motor, in response to the detected relative movement, so as to maintain the desired framing." Rather, Platte discloses monitoring movement of the camera, and then employing correction factors to the starting point of the image scanning to compensate for the movement of the target image within the viewing field. Hence, rather than tracking the image and adjusting the camera to maintain a desired framing, Platte discloses compensation of the position of the target object in the frame due to the movement of the camera. In fact, Platte shows in Figures 1A-1C how the target image is moved in the field (frame) because of camera movement and is not maintained at a desired framing, as is recited in the claims. And to compensate for such movement, Platte teaches shifting the initial point of the scan of the target image.

Although, Saburi discloses a videophone displaying an image on a portable device, Saburi is totally silent with regard to the compensating for movement of the camera of the transmitting party.

It is respectfully submitted that in order to establish a *prima facie* case of obviousness, three basic criteria must be met;

1. there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings;
2. there must be a reasonable expectation of success; and
3. the prior art reference must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on

applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)

With regard to the invention as recited in claim 1, Applicant respectfully submits that a *prima facie* case of obviousness has not been set forth. As shown neither Platte nor Saburi disclose or suggest detecting relative movement between the object and the camera and adjusting the camera setting in accordance with the detected movement to maintain a desired framing of the object. Platte compensates for the new position of the image in the field and Saburi is totally silent with regard to this limitation. Hence, the combination of Platte and Saburi fails to teach or suggest all the claim limitations recited.

With regard to independent claims 14 and 15, these claims were rejected for the same reason stated in rejected claim 1. Claims 14 and 15 include subject matter similar to that recited in claim 1. Hence, for the remarks made with regard to claim 1, which are repeated in overcoming the rejection of claims 14 and 15, Applicant respectfully submits that a *prima facie* case of obviousness has not been set forth.

With regard to the dependent claims, these claims depend from the independent claims. Applicant respectfully submits that these claims are allowable at least for their dependence upon allowable base claims, without even contemplating the merits of the dependent claims, as it was held by *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) that if an independent claim is non-obvious under 35 U.S.C. §103(a), then any claim depending therefrom is non-obvious.

2. 35 USC §103 Rejection of claim 11

The rejection of claim 11 is in error because the combination of the references fails to show a limitation cited in independent claim 1 from which claim 11 depends.

Claims 11 Depends From an Allowable Base Claim

Claim 11 depends from independent claim 1, which includes subject matter not disclosed by, and allowable over, the combination of Platte and Saburi. Applicant submits that claim 11 is allowable at least for its dependence upon an allowable base claim, without even contemplating the merits of the dependent claim for the reasons held in In re Fine, 837 F.2d 1071, 5 USPQ 2d 1596 (Fed. Cir. 1988) (if an independent claim is non-obvious under 35 U.S.C. §103(a), then any claim depending therefrom is non-obvious).

Notwithstanding the argument above, claim 11 depends from claim 1, which has been shown to include subject matter not disclosed by the combination of Platte and Saburi and the Vincent references fails to disclose the subject matter lacking in the combination of Platte and Saburi.

In view of the above, applicant submits that the above referred-to claims are patentable over the teachings of the cited references.

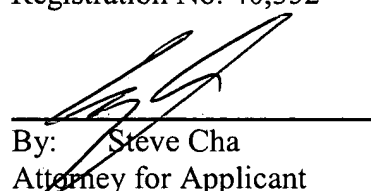
VIII. CONCLUSION

In view of the law and facts stated herein, it is respectfully submitted that the teachings of the cited references fail suggest the claimed invention and the burden of showing that reference discloses all of the features, expressly or inherently, recited in the claims has not been met.

It is respectfully requested that this honorable board reverse all outstanding grounds for rejecting the claims.

Respectfully submitted,
Larry Liberchuk
Registration No. 40,352

Date: December 12, 2005


By: Steve Cha
Attorney for Applicant
Registration No. 44,069

IX. CLAIMS APPENDIX

The claims which are the subject of this Appeal are as follows:

Claim 1. A method for automatically framing and tracking an object of interest using a video camera integrated into hand-held processing devices including PDAs, mobile telephones, palmtops, and portable computers to insure stability of the image content as a user manipulates the device, the method comprising the steps of:

providing said video camera with a wide field of view;

continuously detecting relative movement between the hand-held device and the object of interest within a displayed image generated by said camera; and

continuously electronically adjusting the camera, without use of a motor, in response to the detected relative movement, so as to maintain a desired framing and tracking of the object of interest within an image and/or successive images, as long as the image or images remain in the field of view generated by the camera for selectively providing either one of a still picture of the object or video image of the object, respectively, for providing a stable image in the presence of movement of a user's hand holding said device.

Claim 4. The method of claim 1 wherein the camera is physically adjustable by a user.

Claim 6. The method of claim 1 wherein the camera has one or more of solely electronically adjustable pan setting, an adjustable tilt setting, and an adjustable zoom setting, performed without use of a motor.

Claim 10. The method of claim 1, wherein said step of continuously electronically adjusting the camera is based at least in part on an output of an orientation determination device integrated into or otherwise associated with the hand-held device, for detecting relative movement between said device and an object of interest caused by movement of a user's hand.

Claim 11. The method of claim 10 wherein the orientation determination device comprises one or more gyroscopes integrated into the hand-held device.

Claim 12 (Previously presented): The method of claim 1, wherein said step of continuously electronically adjusting the camera is based at least in part on an output of an image processing operation applied to an image generated by the camera.

Claim 13 (Previously presented): The method of claim 1, wherein said step of continuously electronically adjusting the camera is based at least in part on a hybrid combination of an orientation determination operation and an image processing operation.

Claim 14 (Previously presented): An apparatus for automatically framing and tracking an object of interest, the apparatus comprising:

a hand-held processing device including PDA's, mobile telephones, palmtops, and portable computers, having at least one video camera integrated therein, the hand-held

device further comprising a processor operative to continuously monitor the detection of relative movement between the hand-held device and the object of interest, due to movement of a user's hand holding said device, said processor being responsive to the detected relative movement for continuously solely electronically adjusting, without use of a motor, at least one setting of the camera so as to continuously maintain a desired framing of the object of interest within an image generated by the camera as a user manipulates the device, for providing a stable image.

Claim 15. An article of manufacture comprising a storage medium for storing one or more programs for tracking an object of interest using at least one video camera having integrated into a hand-held processing device, including PDA's, mobile telephones, palmtops, and portable computers, wherein the one or more programs when executed by a processor implement the steps of:

detecting relative movement between the hand-held device and the object of interest; and

adjusting solely electronically, without use of a motor, at least one setting of the camera, in response to the detected relative movement, so as to maintain a desired framing of the object of interest within an image generated by the camera, for providing a stable image.

X. EVIDENCE APPENDIX

No supplemental evidence was provided by appellant that was entered into the record during the prosecution of this matter.

XI. RELATED PROCEEDING APPENDIX

No related proceedings are pending and, hence, no information regarding same is available.